AMENDMENT TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 – 20 (Canceled).

21. (Currently amended) A method for coordinated management of a plurality of contactless radio-frequency readers of chips incorporating electronic microcircuits, the method comprising:

transmitting, in a first time interval, transmit operations composed of command instructions from each of the plurality of readers to the electronic microcircuits of the chips associated with each respective reader; and

receiving, in a second time interval, receive operations composed of responses from the electronic microcircuits of the chips associated with each respective reader,

wherein the first and second time intervals do not overlap,

wherein each of the plurality of readers are active readers, whereby the active readers are synchronized to group their respective transmitting and receiving into distinct time intervals, and

wherein a synchronization process includes:

collecting durations of the transmit operations for sending the command instructions of first transmit/receive cycles of the active readers; and

sending the active readers instructions to execute the transmit operations for sending the command instructions of transmit/receive cycles spread over time and in order of decreasing duration of the transmit operations, beginning with the reader assigned the command instruction of the transmit/receive cycle having a greatest duration, a delay

between executing one instruction and the next being equal to a difference between the durations of the transmit operations of the transmit/receive cycle command instructions to be transmitted by the corresponding two readers, up to executing the instruction associated with the shortest duration of the transmit operations.

22. (Canceled).

23. (Previously presented) The method in accordance with claim 21, wherein the transmit operations are grouped to finish at a substantially same time.

24. (Canceled).

25. (Currently amended) The method in accordance with claim ~~24~~ 21, wherein the synchronization process further includes synchronizing instructions for connecting power to or disconnecting power from the antenna of at least one reader of the plurality of readers,

wherein the synchronizing instructions simulate command instructions of a transmit/receive cycle to an active reader,

wherein a time for the antenna current to stabilize after execution of a synchronizing instruction simulating the duration of the transmit operation sending the transmit/receive cycle command instruction to the active reader forms a simulated duration, and the synchronizing instruction forms a simulated transmit operation, and

wherein an instruction to execute a synchronizing instruction forms a simulated instruction to execute a transmit operation of a transmit/receive cycle in which the receive operation has a null duration, thus forming a simulated transmit/receive cycle.

26. (Currently amended) The method in accordance with claim ~~24~~ 21, wherein at the durations comprise multiples of a period of a carrier used by the readers.

27. (Previously presented) The method in accordance with claim 25, wherein at the

simulated durations take the form of multiples of a period of the carrier used by the readers.

28. (Currently amended) The method in accordance with claim ~~24~~ 21, wherein the synchronization process is effected by a synchronization circuit in accordance with a synchronization cycle initiated by one of:

a first request for authorization to execute one of a real or the simulated transmit/receive cycle submitted by a reader following a request from a central control unit of the reader, or

automatically at an end of a last receive operation of real transmit/receive cycles corresponding to a preceding synchronization cycle or, if there is no real transmit/receive cycle, at an end of the simulated transmit operations.

29. (Previously presented) The method in accordance with claim 28, wherein all the readers that have transmitted requests for authorization to execute real or simulated transmit/receive cycles since a start of execution of the preceding synchronization cycle participate in a new synchronization cycle.

30. (Previously presented) The method in accordance with claim 29, wherein all active readers that have participated in the preceding synchronization cycle also participate in the new synchronization cycle.

31. (Previously presented) The method in accordance with claim 28, wherein, for each synchronization cycle, the collecting of real and/or simulated durations is effected for all the readers, with determination of a number of readers for which an instruction to execute the real or simulated transmit operation must be sent, and the sending of instructions to execute the transmit operation is adapted as a function of the said number of readers.

32. (Previously presented) The method in accordance with claim 21, wherein clock signals of each reader of the plurality of readers are synchronized to a same timebase.

33. (Previously presented) The method in accordance with claim 21 being adapted for use with readers having a function of detecting and managing collisions at a level of simultaneous responses of a plurality of microcircuits to a same command instruction of a transmit/receive cycle, wherein the method is associated with a device adapted to implement the following accelerated collision management process:

upon detecting a collision by virtue of a mismatch between the value '0' or '1' of a bit of a response and an expected value for that bit, determining the "strong" or "weak" nature of the collision as a function of the level of uncertainty as to the detected value of the response bit concerned; and

iteratively processing collisions, wherein only "strong" collisions are processed on the first iteration.

34. (Previously presented) The method in accordance with claim 33, wherein discrimination between "strong" and "weak" collisions is obtained by fixing for each reader a predetermined sharing threshold associated with the level of uncertainty as to the detected value of the response bit concerned.

35. (Previously presented) The method in accordance with claim 34, wherein the sharing threshold is selected to distinguish between real collisions, "strong" collisions resulting from simultaneous responses from a plurality of microcircuits separate from false collisions, and "weak" collisions resulting from electromagnetic interference external to the readers or interference between readers with antennas in close proximity during sending of the responses.

36. (Currently amended) A synchronization circuit for a plurality of contactless radio-frequency readers of chips incorporating electronic microcircuits adapted to implement ~~the~~ a method ~~according to claim 21~~ including transmitting, in a first time interval, transmit operations composed of

command instructions from each of the plurality of readers to the electronic microcircuits of the chips associated with each respective reader, and receiving, in a second time interval, receive operations composed of responses from the electronic microcircuits of the chips associated with each respective reader, such that the first and second time intervals do not overlap, and each of the plurality of readers are active readers, whereby the active readers are synchronized to group their respective transmitting and receiving into distinct time intervals, and such that a synchronization process includes collecting durations of the transmit operations for sending the command instructions of first transmit/receive cycles of the active readers, and sending the active readers instructions to execute the transmit operations for sending the command instructions of transmit/receive cycles spread over time and in order of decreasing duration of the transmit operations, beginning with the reader assigned the command instruction of the transmit/receive cycle having a greatest duration, a delay between executing one instruction and the next being equal to a difference between the durations of the transmit operations of the transmit/receive cycle command instructions to be transmitted by the corresponding two readers, up to executing the instruction associated with the shortest duration of the transmit operations, the synchronization circuit comprising:

a microprocessor-based processing unit structured and arranged to effect the synchronization; and

an interface circuit structured and arranged to be readily connectable to each of the readers of said plurality of readers.

37. (Previously presented) The synchronization circuit in accordance with claim 36, wherein the interface circuit includes a device for demultiplexing data transmission lines from the readers.

38. (Previously presented) The synchronization circuit in accordance with claim 36, wherein the interface circuit includes a device for delivering to the readers clock signals synchronized to a timebase of the processing unit.

39. (Previously presented) A contactless radio-frequency reader of chips incorporating electronic microcircuits, comprising:

a transmitter and receiver for respectively sending and receiving transmit/receive cycles for the electronic microcircuits; and

a synchronization unit structured and arranged to synchronize the transmit/receive cycles with transmit/receive cycles of other readers associated with other electronic microcircuits.

40. (Previously presented) The contactless radio-frequency reader in accordance with claim 39, wherein the synchronization unit comprise hardware and software to effect the synchronization.

41. (Previously presented) The contactless radio-frequency reader in accordance with claim 39, wherein the synchronization unit accesses hardware and software to effect the synchronization.

42. (Currently amended) The contactless radio-frequency reader in accordance with claim 39, further comprising a device to control connection of power to and/or disconnection of power from ~~the antennas~~ said transmitter and receiver.

43. (Previously presented) The contactless radio-frequency reader in accordance with claim 39, further comprising a device employing an accelerated collision management process.

44. (Previously presented) The contactless radio-frequency reader in accordance with claim 39, wherein the synchronization unit comprises a processing unit, and the reader further comprises a clock signal switching device for switching from an internal timebase to a timebase of

the processing unit.

45. (Currently amended) A system of contactless radio-frequency read/write readers of chips incorporating electronic microcircuits, comprising:

a plurality of readers;

a synchronization circuit being coupled to the plurality of readers and adapted to implement a synchronization of transmit/receive cycles of the plurality of readers to collect durations of the transmit operations for sending command instructions of first transmit/receive cycles of active readers, and to send the active readers instructions to execute transmit operations for sending the command instructions of transmit/receive cycles spread over time and in order of decreasing duration of the transmit operations, beginning with a reader assigned the command instruction of the transmit/receive cycle having a greatest duration, a delay between executing one instruction and the next being equal to a difference between the durations of the transmit operations of the transmit/receive cycle command instructions to be transmitted by the corresponding two readers, up to executing the instruction associated with a shortest duration of the transmit operations; and

a microprocessor based central control unit structured and arranged to manage the synchronization circuit.

46. (Currently amended) A system of contactless radio-frequency read/write reader of chips incorporating electronic microcircuits, comprising:

a plurality of readers; and

a synchronization circuit structured and arranged to synchronize transmit/receive ~~cyclesof~~ cycles of the readers to collect durations of the transmit operations for sending command instructions of first transmit/receive cycles of active readers, and to send the active readers instructions to execute transmit operations for sending the command instructions of transmit/receive cycles spread over time

and in order of decreasing duration of the transmit operations, beginning with a reader assigned the command instruction of the transmit/receive cycle having a greatest duration, a delay between executing one instruction and the next being equal to a difference between the durations of the transmit operations of the transmit/receive cycle command instructions to be transmitted by the corresponding two readers, up to executing the instruction associated with a shortest duration of the transmit operations and including a clock signal switching device for switching from an internal timebase to a timebase of a central processing unit.